Idaho's ISAT Growth Model

# Understanding Student Growth Percentiles

**Idaho's Growth Model** is based on the work of Dr. Damian W. Betebenner of the National Center for the Improvement of Educational Assessment in partnership with the Colorado Department of Education. Currently, 15 states have adopted the growth model as part of their state accountability systems. With the implementation of the Idaho Growth Model, the state will supplement the measure of student proficiency—below basic, basic, proficient, advanced—with a new growth measurement, which will be expressed as Student Growth Percentiles (SGP).

## What are Student Growth Percentiles?

A Student Growth Percentile (SGP) compares a student's ISAT scale score growth to that of his or her academic peers in the State of Idaho. Academic peers are students in the same grade—and same content (reading, mathematics, or language usage)—with a similar scale score history. The Idaho Growth Model compares each student's **current** achievement to students in the same grade throughout the State who had a similar achievement history. The NCLB plus Extender scale score is used for SGP calculations. Student Growth Percentiles are reported on a 1 to 99 scale. A student with a SGP at the 75th percentile indicates the student grew more than 75% of his/her academic peers. Consider the following 3 examples.

### Example 1: Academic Peer Group

**Sarah**

5th grade Scale Score ..... 206
6th grade Scale Score.....218
7th grade Scale Score .....222
SGP = 65 %ile

**John**

5th grade Scale Score .....207
6th grade Scale Score.....217
7th grade Scale Score .....222
SGP = 66 %ile

Sarah and John have been taking the ISAT for three years. The use of multiple data points in calculating SGP allows for a more accurate portrayal of a student's pattern of growth. Sarah and John had similar 5th grade ISAT reading NCLB plus Extender scale scores. Their nearly identical academic journey places them in the same Academic Peer Group. This similar year-to-year pattern of growth leads to similar SGPs.

### Example 2: Different Student Achievement Levels with the same SGP

**Luke**

5th grade Scale Score.....186
6th grade Scale Score.....198
7th grade Scale Score .....202 (below basic)
SGP = 50 %ile

**Roberto**

5th grade Scale Score .....222
6th grade Scale Score.....225
7th grade Scale Score .....230 (advanced)
SGP = 50 %ile

Student Growth Percentiles are calculated based on students' patterns of growth regardless of achievement or proficiency level. Luke and Roberto have the same SGP although their current achievement level has a 28 scale score point difference. Because of this difference, Luke and Roberto were not in the same Academic Peer Group; however, their pattern of growth relative to their peer groups places them at the same SGP.

## Example 3: Patterns of Growth - Multiple Data Points

A Student Growth Percentile quantifies the change in a student's NCLB plus Extender scale score over multiple years. While the SGP can be calculated with two consecutive data points, multiple data points provide a more accurate picture of a student's academic growth over time. Using multiple data points, a regression formula—sometimes referred to as a sophisticated average—is applied that gives more weight to the most recent scale scores. Below is an example of the calculation of SGP using **two** data points and the influence on SGP when **three** data points are used.

### Sam

6th grade Scale Score.....223
7th grade Scale Score.....231

SGP = 73 %ile

### Julia

6th grade Scale Score.....223
7th grade Scale Score.....231

SGP = 73 %ile

The scale scores for Sam and Julia are the same for 6th and 7th grade. Therefore, using two data points the SGP is the same.

### Sam

5th grade Scale Score.....219
6th grade Scale Score.....223
7th grade Scale Score.....231

SGP = 77 %ile

### Julia

5th grade Scale Score.....225
6th grade Scale Score.....223
7th grade Scale Score.....231

SGP = 57 %ile

Adding an additional data point—5th grade scale score—shows the academic journeys for Sam and Julia are not identical. While Sam showed incremental, upward academic growth, Julia's scale score dropped in 6th grade and increased in 7th grade to a level above her 5th grade score. Growth for a student that drops and bounces back is not as remarkable as growth for a student with a consistent upward trend. Sam gained 12 scale score points between 5th and 7th grades, while Julia gained 6 scale score points. This pattern of growth is reflected in the SGP.

## What is low, typical, or high growth?


This diagram illustrates the percentile scale of 1 to 99. A percentile indicates the position of a student's score on the scale and the percent of students scoring above and below the student. For example, Meagan's SGP at the 43 %ile means her growth was better than 43% of her academic peers.

The SGP is used as an indicator of a student's growth progress. The State of Idaho has determined that a student growth percentile that falls at or below the 34th percentile reflects low growth; between the 35th-65th percentile typical growth; and at or above the 66th percentile high growth.